

## Electronic Monitoring Workgroup - Minutes

September 23-24, 2014  
Room 205, Old Federal Building, Anchorage, AK

**Workgroup:** Dan Hull (chair)

Appointed: Bernie Burkholder (F/V Northern Endurance), Stacey Buckelew (Saltwater, Inc. - alternate), Dan Falvey (ALFA), Don Lane (NPFA - alternate), Brian Lynch (PVOA), Howard McElderry (Archipelago Marine Research), David Polushkin (KBFA)

Agency: Dave Colpo (PSMFC), Diana Evans (NPFMC), Heather Gilroy (IPHC), Nicole Kimball (ADFG), Nathan Lagerwey (NOAA OLE), Bruce Leaman (IPHC), Martin Loefflad (NMFS FMA), Tom Meyer (NOAA GC), Jennifer Mondragon (NMFS AKR), Chris Rilling (NMFS FMA), Suzanne Romain (NMFS FMA), Farron Wallace (NMFS FMA)

Others attending included: Alia AlHumaidhi, Adam Batty, Sam Cotten, Jason Dean, Jane DiCosimo, Kathy Hansen, Dorothy Lowman, Elizabeth Mitchell, Henry Mitchell, Bill Tweit, Morgan Wealti

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The Chair opened the meeting with introductions and a discussion of expected outcomes from the Workgroup meeting.

### Updates

#### *Fieldwork and Video Review*

Stacey Buckelew and Dave Colpo summarized written reports on Saltwater's fieldwork for 2014, and PSMFC's progress with data review, and Dan Falvey and Farron Wallace provided short updates on fieldwork and research that was reported at the August teleconference. The Workgroup discussed the reports, and highlighted a number of questions and issues that are relevant for designing the 2015 fieldwork. These have been captured in the draft decision point list below. The Workgroup suggested that it would be helpful to expand the Pacific States report: 1) to include the context of fieldwork in 2014, how the approach was developed, and components that changed over the summer (e.g., the need for dockside monitoring); and 2) to integrate the perspective of the field service providers (Saltwater and Archipelago).

#### *Other*

Jennifer Mondragon updated the Workgroup on progress with developing a Regional Implementation Plan for Electronic Technologies. These are being required by all NMFS regions, as a way to assess the regional priorities and needs for implementing electronic reporting and monitoring nationally. Of particular interest to NMFS HQ are assessments of cost that the regions are developing. Jennifer is using the Strategic Plan as a basis, and is also including a description of the Council's EM initiatives in terms of the intended goals, and the process that is being used to achieve them. The initiatives include EM integrated with the Observer Program for catch estimation on small boats; the halibut deck sorting project; ongoing compliance monitoring with video; and ongoing maintenance with eLandings and logbooks. The Plans are due by the end of the year; Jennifer will be able to share a more complete draft with the EMWG at its next meeting.

Martin Loefflad also gave a brief update on the Inspector General's audit of Observer Programs around the country, noting that they have a particular interest in electronic monitoring. Martin also noted that this is not an investigation of wrongdoing. Typically, such audits result in recommendations for how the agency can improve implementation of the program under review. He expects it to be January at the earliest before he receives a draft report.

## Discussion of the purpose of and alternatives for integrating EM into the Observer Program

The Workgroup spent considerable time discussing expectations for EM, assumptions about the Council's goals and priorities, how alternatives should be structured, and how and in what order decision points should be addressed by the research and the Council. The following presents a rough outline of where the Workgroup ended up at the end of the discussion. The intent is to continue working on these elements over the next couple of months, and to bring back a more polished product for the next meeting, in order to provide a clear context for the fieldwork and implementation research.

### *Draft elements of the purpose and need*

- Affirm Council's goal is to improve discard estimation of fish (including halibut PSC). Also management goal to monitor mortality of seabirds.
- Affirm that EM is one of the suite of tools available for effective fisheries monitoring, and that there is also a continuing need for human observers as part of that suite. There will be human observer coverage at some level at some times in all portions of the fishery, to provide data that cannot be collected via EM (e.g., biological samples).
- In restructuring the Observer Program, the Council assumed that an electronic monitoring option would be integrated into the program for vessels that have trouble accommodating a human observer.
- There are varying degrees of economic, operational and social hardship experienced by vessel operators and crew, on vessels that have insufficient space to carry an observer.
- Initial priority is a monitoring tool on vessels that are not taking human observers. Effectively this means <40 ft vessels, and vessels 40-57.5 ft where taking an observer is problematic.
- Goal is to develop EM for longline and pot vessels (sampling is conceptually similar for both gear types, and there are established pilot programs for both).
- Next priority is EM as an alternative to carrying an observer for any fixed gear vessel (including >57.5 ft), to reduce monitoring costs and/or improve quality of fishery-dependent data at sea.
- Affirm that we want to retain as much flexibility as possible for deciding who will be able to take EM, based on the annual monitoring needs for the fisheries. We recognize that we do need regulatory change to specify the vessel's responsibilities for using monitoring tools in the long term, including cameras and other tools. But we also understand that the structure of the annual deployment plan could provide flexibility to deploy combinations of tools for different categories.

### *Draft Alternatives*

As a starting point for further discussion, the Workgroup ended up with the following suite of draft alternatives for achieving catch estimation of discards on longline and pot vessels where taking an observer is problematic. With respect to Alternative 5, the Workgroup feels it is important to include this alternative as a backup, because it has not yet been proven that the Council can achieve its catch estimation goals by relying on video as the source of species data. The Workgroup struggled with how to structure alternatives, because many critical decision points are embedded within each of these alternatives. The group explored other options, but came back to distinguishing by type of monitoring tool(s) that would be implemented.

Alternative 1: Status quo observer sampling of trips, with some vessels either in the zero selection pool, or receiving conditional releases from the requirement to carry an observer

Alternative 2: EM stand-alone for catch estimation of discards

- a) Standard camera
- b) Stereo camera at rail

Alternative 3: EM integrated with a combination of tools for catch estimation of discards

- a) Standard camera with self-reported data (*note, this data is intended to supplement the video record, e.g. self-reported effort information, and could be collected a number of ways, from a simple data sheet to an e-logbook*)
- b) Stereo camera at rail with self-reported data
- c) Standard camera with self-reported data and dockside monitoring
- d) Stereo camera with self-reported data and dockside monitoring

Alternative 4: Discard chute containing stereo camera integrated with a combination of tools for catch estimation of discards

Alternative 5: Logbook used for catch estimation, with EM audit

- a) Census of vessels
- b) Sample of vessels

### *Decision points*

Some of these decision points are at the program level, and may need to be incorporated into the alternative structure; others are very specific, and will likely be answered through research. The Workgroup has more work to do to tease out exactly how each of these will be addressed. The group discussed the goal of making 2016 a year of pre-implementation year, to test an operational plan, from sampling of vessels to take EM to incorporation of EM data into the catch accounting system and other uses for observer-based data.

Although the Workgroup did not have time to review the document in advance, it was noted that the “Draft Analysis of an Electronic Monitoring Program for the Pacific Coast Limited Entry Trawl Groundfish Fishery Catch Shares Program,” prepared recently by the Pacific Council staff, could prove useful in reviewing and developing decision points and program elements.

Implementation decision points:

- Whether and how to phase in implementation of EM, such as geographically and/or over categories of users.
- Pre-implementation year (recommendation for 2016)? EFP? Other mechanism?

Deployment decision points:

- What gear: both longline and pot (EMWG recommendation)
- Vessel sizes: vessels <57.5ft that can't take observers (highest priority)
  - vessels >57.5 would be lower priority and not addressed at this time
- Option 1: Vessels opt into EM strata on annual basis, based on fisherman's assessment of their situation relative to observer coverage and/or electronic monitoring
  - Random selection of vessels that opt in; vessels carry EM for some time period
- Option 2: Vessel apply to be in EM strata on annual basis, and NMFS determines which vessels cannot take observer and moves those vessels into EM strata on annual basis
  - Random selection of vessels for EM; vessels carry EM for some time period
- Sub-options – instead of random selection of vessels, these are other selection ideas that could be applied to deployment options 1 or 2
  - Install the EM on all boats in the EM category for all trips, then randomly select trips to turn on the cameras
  - Install the EM on all the boats in the EM category for all trips, then sub-sampled the EM for analysis and review

Field services decision points:

- Ports: restrict to set ports, or allow EM to be deployed in any port
- Duration of time carrying EM: 2-month, 6-months, annual

- How to accomplish EM installation and data collection
  - First trip quality control check
  - how to collect hard drives

Data services decision points:

- Determine what will be the source of data (video, self-reported, other) for each data element:
  - Species identification
  - Species count
  - Percent retained (disposition)
  - Weight conversion method for discarded catch
  - Set time and date, retrieval time and date
  - Set location, retrieval location
  - Fishing effort (number of hooks, hook spacing)
  - Trip beginning, ending date (*video reviewers note that it may be difficult to determine from video*)
  - Halibut viability – *IPHC measurement of viability is based on injury codes that determine discard mortality rates (DMRs); right now video only provides release methods. We will need to collect data to build the relationship between the release method and discard mortality rates.*
- For each of the data elements:
  - What is the resolution of those data elements that is reliable (i.e. can identify species reliably or can identify species group)
  - What is the resolution that we need for each data element – haul-specific or trip-specific
  - Timeliness required for data analysis
  - What is the level of data needed – sub-sample of the hauls (and sampling design for subsampling) or census of hauls (*impacts of nonsampling errors*)
- What level of data review is necessary – e.g., 100% review, 30% review
- Video review necessary for rail cameras and validation (deck) cameras
- Length of time for processing sets after hydraulics are turned off
- How much of discard is drop-off vs intentional discard

Technology decision points:

- what type of camera (chute or rail; stereo or standard)
- validation (deck) cameras – required or not (*video reviewers strongly encourage*)
- what types of sensors
- elog vs paper log

Vessel responsibility decision points:

- Handling of catch
  - Handling of discards (where and when discards can occur)
  - Measuring board for length; pre-determined weight totes
- Maintenance responsibilities (self-test routines, cleaning lens, etc)
- What happens if there is an EM system failure
- Vessel infrastructure requirements (power, etc)
- Vessel responsibilities during installation and removal of EM equipment
- How to time-synch the different data streams (video, sensors)
- Bird handling procedures

Cost structure decision points:

- What is the budget available for EM program? Analyze a set of possible alternatives using the fee collected from the vessels <57.5ft as a starting point (e.g., \$500,000 - \$5 million)
- Vessels pay for EM systems
- NMFS pays for EM systems out of observer fee
- Data analysis paid for by NMFS either in-house or third party vendor

Enforcement decision points:

- What tools are available in an audit program if a vessel's logbook is not accurate? Can't do Canadian system of requiring payment for full review. Industry agreements? EM as a privilege that can be revoked?

*Strawmen for each alternative*

The Workgroup developed a first cut at an operational strawman of cameras in a standard EM configuration (for standard or stereo cameras), and for monitoring using a logbook audit approach. The strawman integrates elements and options based on the decision points laid out above. These strawmen will continue to be refined over the next couple of months, and will be discussed at the next EMWG meeting. They are intended to form the basis of the 2015 operational research plan. An operational strawman for the chute camera configuration will not be prepared until after more field testing of the chute camera has occurred.

## **2015 Cooperative Research Plan**

The Workgroup recommended that the research plan not be sent to the SSC for review at this time. Given the additional clarification about the framework of the alternatives and decision points discussed at this meeting, the Workgroup intends to spend the next couple of months refining the alternatives and the strawmen, and clearly tie the design of the 2015 research plan to the decision points. In this way, the SSC will receive a more complete package to review at their February meeting. This would still allow for time to incorporate SSC feedback into the study designs before the beginning of fieldwork in the spring of 2015. The SSC will be able to provide a more helpful and thorough review if they are also provided with the management context for the proposed research. It was also suggested that the SSC might take up this review in an SSC workshop, which might allow for a more in-depth presentation of work-to-date on EM research, and lessons learned.

The Workgroup decided to change the current terminology of the research plan, to move away from research "tracks" 1-4, and instead identify specific research projects that will provide outcomes to inform the overall goal of integrating EM with the Observer Program. In part, this decision was prompted by some of the research tracks having become informally labeled in a way that is misleading with respect to their intended objective, and also from the fact that the current Track 1 embodies many different research projects that should be undertaken by a variety of different participants. Identifying specific research projects and who is involved in them also provides a more collaborative structure for the work to be conducted by all stakeholders. The Workgroup discussed at length the different projects, identifying which will result in written products and which in field testing; appointing a project lead and other team members to spearhead each of the projects; and considering timing by identifying whether the outcome of each project needs to either be presented to the SSC, or feed into the design of the 2015 fieldwork. The project list is attached, along with a preliminary evaluation of which category of decision points each project is intended to address.

## **Scheduling**

The Workgroup suggests meeting again in November, to continue refining the work products begun at this meeting. A November meeting would allow the Council to review the Workgroup's articulation of the purpose and need, and analytical framework for EM development, as context for the design of the 2015

fieldwork. The Workgroup would then intend to have the 2015 Cooperative Research Plan ready for SSC review in early January, in preparation for the February meeting.

At the November meeting, the Workgroup will also review two items deferred from the September agenda, namely budget/funding for fieldwork, and draft timelines for research, analysis, and rulemaking. The Workgroup also did not specifically address data protocol review at the meeting, but this was addressed in the list of projects forming part of Research Plan.